# Methods of forming information competences in future teachers

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**Abstract:** The process of introducing new methods and technologies in education continues, and this, in turn, increases the relevance of research aimed at the formation of pedagogical design and information competencies. The use of digital technologies, innovative pedagogical methods and techniques in the modern education system is an important factor in improving the educational process and increasing its efficiency. The integration of information and communication technologies in education increases the need for the development of new approaches to pedagogical design and research aimed at the development of information competencies.

**Keywords:** Pedagogical design, information and constructive competencies, innovative pedagogical technologies, digital education, simulation methodologies, educational platforms, didactic strategies, pedagogical approaches, information and communication technologies (ICT), competency-based approach, primary education, creative approach, monitoring of the educational process.

**Introduction:** Reforms being carried out in the field of education in Uzbekistan are also aimed at the widespread introduction of modern technologies and enriching the educational process with new approaches. As part of these reforms, a wide range of measures are being implemented to develop information and constructive competencies, introduce digital educational platforms, and improve the digital literacy of educators. These efforts are aimed at ensuring that the education system complies with modern requirements and international standards [1].

Currently, optimal approaches aimed at improving the quality and efficiency of the educational process are taking a leading position. Particular attention is paid to creating problem situations in the educational process, focusing on real-life issues, developing the cognitive processes of the individual, effectively using various forms of reflection, and motivating students to study. These studies play an important role in conducting scientific work on improving the content of literary education on the basis of pedagogical technologies in the integrative, heuristic, creative, and cognitive directions that motivate future educators to be creative and innovative. After all, a person's research ability has existed since ancient times, that is, on the basis of an understanding of his needs for knowledge. [2]

## METHODS

In the 21st century, information has become an integral part of life and the effective expansion of its transmission and reception capabilities have made the information field an important factor in the development of science and social life. Social progress is reflected in all areas, including education, and the education sector, as part of social life, constantly reflects social achievements.

In most cases, the effectiveness of education is assessed by the amount (volume) of information acquired, and the amount of information is taken into account when assessing educational outcomes. However, the main requirement of an information society is the level of effective application of the acquired information in relevant areas and life activities. Scientific research has led to the need to focus on results in education based on a competency-based approach. In this approach, attention is paid to the ability of students to apply it in various situations in practice, rather than the amount of information acquired.

The concept of information literacy is studied by researchers in a narrow and broad sense. In a narrow sense, information literacy is associated with the ability to use modern information technologies and methods to search, receive, process, present and transmit

information. In a broader sense, information literacy includes not only the use of new technologies, but also the analysis of information, systematic processing, use of information retrieval systems, and the implementation of information activities using traditional technologies [3].

The internal needs of the education system and external socio-economic changes indicate the need to use modern information technologies to effectively solve the problem of updating primary education. It is necessary to take an integrated approach to the informatization of the primary education system, not limited to the basics of specific subjects for schoolchildren. This creates the need to develop a methodology and technology of scientific-pedagogical and educational-methodological developments aimed at the effective use of ICT capabilities by future preschool educators [4].

We take into account the need for continuous technological development, informatization of social life, and the use of modern methods of working with information to analyze the features of introducing modern information technologies into the preschool education system and to form information-constructive competence in students of higher educational institutions. This approach organizationally determines the educational process of a higher educational institution, in which the graduate is not only formed as a qualified specialist in the field of information and communication technologies, but also becomes a competitive personnel in his professional activity and, at the same time, educates future educators with information and constructive competence.

Innovative pedagogical technologies and approaches play an important role in the formation of information and constructive competence in future educators. These technologies and approaches are described as follows:

Educational platforms: Modern educational platforms, such as electronic educational materials, online courses and interactive tools, help future educators develop information and constructive competences. These platforms allow individualizing the educational process and adapting it to the needs of students.

Simulation and Game Methodologies: The use of simulation and game methodologies in the educational process develops the creative problem-solving abilities of future educators. Through pedagogical simulations and role-playing games, students put the theoretical knowledge they have learned into practice.

Multifunctional projects: Innovative pedagogical technologies allow for the creation of learning environments using multifunctional designs. These designs are updated and adapted to the needs of students and the changing requirements of the educational process.

Scientific research provides the necessary methodological foundations for the formation of information-constructive competencies in future educators. The methodological foundations include the following aspects:

Pedagogical design approaches: Pedagogical design approaches are aimed at aesthetically and functionally enriching the educational process. With the help of these approaches, it is possible to create a creative environment for students and develop their information-constructive competencies.

Didactic strategies: Didactic strategies ensure the effective use of pedagogical technologies to form information-constructive competencies. For example, individualization and differentiation strategies optimize the educational process, taking into account the individual needs of students.

Monitoring the educational process: For the effective organization of the educational process, methodological monitoring and evaluation systems are necessary. With the help of these systems, the quality of the educational process and the competences of future educators are improved [5].

## DISCUSSIONS

The historical roots of the competency approach are reflected in the works of Eastern thinkers Abu Rayhan Beruni, Abu Ali ibn Sina[6], Abu Nasr Al-Farabi, Abdullah Avloni. In these historical legacies, many ideas related to the importance and significance of ideas aimed at acquiring competency-based knowledge in the development of society are expressed.

Abu Rayhan Beruni[7] (973–1048) in his scientific research and works widely covered various fields of science, and he occupies a special place not only in Eastern culture, but also in the world scientific heritage. Some aspects of the competency approach can be seen in Beruni's work, in his work "Qanuni Mas'udi" he revealed the connection between such disciplines as mathematics, astronomy, geography, physics. This approach is one of the main elements of the competency approach today, teaching students to combine knowledge gained from several disciplines and apply it in practical situations. Al-Biruni's scientific legacy is consistent with a number of aspects of today's competency-based approach. Abu Nasr al-Farabi[8] (872–950) was a great philosopher, scientist, and thinker of the East, whose scientific and philosophical works play an important role in the modern

educational process. Al-Farabi's work contains a number of ideas aimed at acquiring constructive competency-based knowledge, which are consistent with today's competency-based approach. In his work "The Origin of Sciences", he classifies sciences and shows the interrelationships of each science. This approach helps learners to acquire knowledge in a logical and systematic manner, which is an important factor in the development of constructive competencies. Al-Farabi emphasized the importance of self-development and education. He wrote that a person should always work on himself, increase his knowledge, and strive for innovation. This principle serves as the basis for the formation of constructive competencies in students for independent learning and self-development. Farabi's scientific and philosophical works are an important source in the formation of constructive competencies today, and their integration into the educational process helps to develop students' creative and logical thinking, and to form problem-solving skills.

Abdulla Avloni (1878–1934) is a great enlightener and educator who made a great contribution to the development of culture and education in Uzbekistan with his pedagogical works. His views on education and pedagogical works contain many ideas that serve the development of constructive competencies. In his opinion, education should not consist only of book knowledge, but also include practical skills that learners can use in life. This approach is an important element of the development of constructive competencies today. Avloni emphasized that "Education is for us a matter of life or death, salvation or destruction, happiness or disaster." He emphasized that the process of education and upbringing is inseparable, and education without upbringing is ineffective. This approach serves to develop constructive competencies in learners aimed not only at acquiring knowledge, but also at self-development, and at the formation of moral and spiritual values. Avloni advocated the use of modern educational methods and techniques. He tried to get acquainted with new methods of pedagogy and integrate them into the education system in a timely manner. This approach requires the development of teaching methodologies that are relevant for the formation of modern constructive competencies [9].

## RESULTS

The possibilities of transmitting and receiving information have expanded and have become an important factor in the development of science and social life. All aspects of social development, including the field of education, are affected by these changes. The education system is an integral part of social life, in which social achievements are reflected and updated

[10].

In many cases, the effectiveness of education is assessed by the volume of information acquired by students. However, the main requirement of a modern information society is the ability to effectively use the acquired information in life activities. Thus, in education based on a competency-based approach, more attention is paid to the ability of students to use the acquired information.

The concept of information literacy is analyzed in a narrow and broad sense. In a narrow sense, this term refers to the skills of searching, receiving, processing and presenting information using modern information technologies. In a broad sense, it also includes the ability to systematically analyze information, correctly process it and use search systems.

The need to use modern information technologies in the education system arises from internal and external socio-economic needs. This requires preschool educators to effectively use the capabilities of ICT (Information and Communication Technologies). Equipping future educators with information-constructive competencies in higher educational institutions has become an urgent issue, and the demand for the use of modern information technologies is increasing [11].

The need to introduce information technologies in preschool education and the formation of information-constructive competence in higher educational institutions rely on modern pedagogical methodologies. These methodologies help to train competent, competitive personnel in the field of information and communication technologies, and they educate future educators with information-constructive competence.

Innovative pedagogical technologies play an important role in the formation of information-constructive competence.

Scientific research provides the main approaches to the formation of information-constructive competence:

Pedagogical design: Aims to enrich the educational process aesthetically and functionally, which develops creative and innovative thinking in students.

Didactic strategies: For example, individualization and differentiation strategies make the teaching process more effective, taking into account the specific needs of students.

Monitoring and evaluation: Systematic monitoring and evaluation methods are used to improve the quality of the educational process and develop student competence [11].

The above approaches play an important role in the

formation of future educators as competitive and innovative personnel.

## CONCLUSION

In all areas, including education, the ability to effectively use information obtained as a result of the rapid development of information technologies should be considered as the main criterion. The concept of information literacy, not only in a narrow but also in a broad sense, plays a key role in the educational process, and modern technologies and methods play an important role in the development of this competence.

The education system, adapting to internal and external changes, is making the use of information technologies in primary education a necessity. This requires the effective use of modern approaches and innovative pedagogical technologies to form information-constructive competencies of future educators. Simulations, game methodologies and multifunctional projects serve to increase the effectiveness of education.

In conclusion, pedagogical design and didactic strategies are the main tools for the formation of information-constructive competencies, helping to organize the educational process in an aesthetic, functional and effective way. At the same time, monitoring the educational process and applying strategies adapted to the needs of students are important in the formation of this competency.

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Abu Ali ibn Sino (Avicenna) - Ibn Sinoning "Tib qonuni" (11-asr) asarida bilim olish va ilmiy kompetentlikka doir ko'plab yondashuvlar mavjud. Ibn Sinoning asarlari, uning ilmiy metodologiyasi va tibbiyotdagi yondashuvlari kompetentlik g'oyalarini aks ettiradi.

Abu Rayhon Beruniy - Yana, Beruniyning asarlarida bilim olish va uning jamiyat taraqqiyotiga qo'shadigan hissasi haqida ko'plab fikrlar mavjud. Masalan, Beruniyning "Qonun al-Mas'udi" (11-asr) asarida bilim va kompetentlikka oid g'oyalar mavjud.

Abu Nasr Forobiy - Forobiyning "Fozil va ummat" (10-asr) asarida bilim va kompetentlikka oid yondashuvlar mavjud. U shaxsning bilim olish va jamiyatda faoliyat yuritish uchun kerakli kompetentliklar haqida fikr bildirgan.

Abdulla Avloniy - Avloniyning "Ma'rifat" (20-asr) asarida ta'lim va kompetentlikka oid yondashuvlar, shuningdek, ularning jamiyat taraqqiyotidagi ahamiyati haqida ma'lumotlar mavjud.

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